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for the
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Reviewing 1969

Forest Service USDA

California



READY FOR THE 70'S

READY FOR THE 70'S — 1969 REVIEW

For many years, the Forest Service has advocated the policy of multiple use management of the National Forests. This concept has been praised by many, condemned by some, and probably not understood by a majority. In this report I want to demonstrate how, under this concept, the public National Forest lands are being managed to consider the entire environmental picture.

Our most important challenge in the 70's is to harness our professional capacities and intensify management to produce increasing yields of needed goods and services while restoring and protecting environmental quality. We will utilize our resources, but use must be consistent with man's total environmental need. This is the Forest Service's part of the total challenge to a world suddenly awakened. All at once most everyone has been brought up short by events which cast large shadows before them. Fish die in befouled rivers . . . oil washes onto beaches from offshore wells . . . waste from cities accumulates monumentally . . . the pall of smog invades new areas, even killing forest trees. The question looming before all of us is this: Have we gone too far to amend man's mistakes, or can the process still be reversed before it gobbles up America?

I am convinced that America will meet that challenge. I am certain the Forest Service can do its part. In California, the National Forest "nature machine" must produce clean water, wood, forage, and jobs while it also provides scenic beauty, open space, wilderness, many forms of outdoor recreation, and suitable environment for fish and

game. It must aid in restoring the quality of the air as its open space helps restore the nerves and the equilibrium of a troubled society. It can do these things if we are wise enough to use, not abuse, natural processes and laws. But forest resources in other ownerships must also do their share if society's needs are to be satisfied.

We need the help and advice of informed and understanding citizens and organizations to direct and operate these National Forests which constitute one-fifth of all California. We have, and can recruit, a tremendously effective organization of scientists, technicians, and other professionals. But since our goal is service to the people of the Nation, we must have guidance from the citizens who are really a part of the nature machine. We seek such advice through meetings, conferences, personal contacts, and correspondence, as well as through directives, studies, and all other media.

On the following pages are highlights of accomplishments during 1969. They are a series of extracts, and in no way complete. If you have questions about any area of Forest Service activity, please contact your local Forest Ranger, the Supervisor of the Forest, or the Regional Office in San Francisco. We will be pleased to receive your comments or to respond to your questions. In this way your Forest Service will more truly mean people service.

J. W. Deinema



The clouds of a sudden mountain storm engulf the peaks of Mt. Ritter and Banner Peak rising beyond Garnet Lake. Minarets Wilderness.



Lassie leads the way along the trail followed by Jed Allen (who portrays Ranger Scott Turner in the Lassie T.V. series) and a group of blind children who took part in the dedication.



Interpretive messages along the trail are explained in Braille as well as by conventional signs.

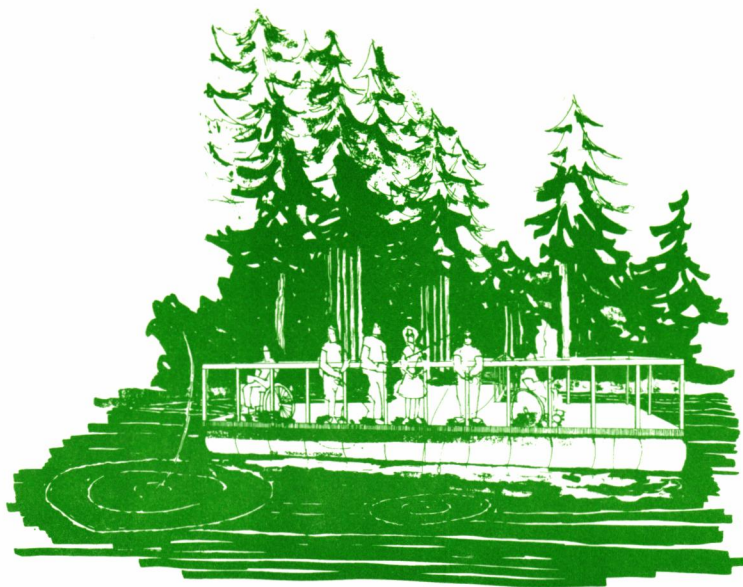
FOREST "BRAILLE TRAIL" OPENED

The Whispering Pines Nature Trail for the blind was dedicated in the San Bernardino National Forest in May. Constructed by the Forest Service in the Barton Flats area, the trail is the first of its kind in the far West.

A nylon cord, installed at hand height along the trail, helps guide the visually handicapped to each of the 23 interpretive stops. At each stop, the smell, feel, and sounds of the forest are described in Braille to give the sightless an adventure in nature, and an understanding of

the management of the National Forest. The trail is posted with conventional signs as well. Approximately three quarters of a mile in length, the trail makes a loop through the Forest at an elevation of 6,500 feet.

The trail was constructed through the cooperation of Wrather Corporation, producers of the Lassie television program, the Lighthouse for the Blind, the San Bernardino City Schools, and the Del Rosa Federated Junior Women's Club.



At Twin Lakes, a fishing pier (illustrated above) plus family and group camp units will allow the handicapped fuller enjoyment of the out-of-doors.

RECREATIONAL FACILITIES PLANNED FOR THE HANDICAPPED

A campground, nature trail, and fishing pier for the handicapped are proposed by the U. S. Forest Service for the Mammoth Lakes and Twin Lakes areas in the Inyo National Forest. These facilities will allow the handicapped to enjoy outdoor recreation as others do.

The project is a joint venture with the Mammoth Lakes Lion's Club and other contributors. The Forest Service will plan, design, and operate the facilities, while the other organizations will contribute to the labor and construction costs.

The proposed Shady Rest Campground for the handicapped will be located near the Mammoth Visitor Center and will have 20 family

camping units, along with three group camp areas. Individual camp and picnic units are being designed to allow the handicapped to move about with ease. The units will have surfaced paths and water faucets located adjacent to each site. Picnic tables will be built so wheelchairs can be used at the tables.

Located near the campground will be the Mammoth Adventure Walk self-guided trail. This multi-purpose trail will be designed for the physically handicapped and the blind, as well as other campers. The trail will be 300 yards long with a four-foot-wide tread, and an easy grade. A nylon guideline will be installed for the convenience of the blind and rest benches will be placed along the trail. At selected stations on the trail, tape recordings will interpret the flora, fauna, and physical and cultural history of the area.

NEW RECREATIONAL FACILITIES AT BULLARDS BAR

Situated in the steep and rugged North Yuba River Canyon in the Plumas and Tahoe National Forests, the Bullards Bar Dam was completed this year by the Yuba County Water Agency, and will offer excellent opportunities for water-oriented recreation. When full, the lake will extend 16 miles up the canyon, it will be up to one mile wide, and have 58 miles of shoreline. Easily accessible, the reservoir is located about 1½ hours' drive northeast of Sacramento.

The recreational facilities include two campgrounds with 97 family units, two picnic sites with 60 family units, two double-lane boat ramps, a group camp, and a marina. The facilities were constructed by the Yuba County Water Agency under a Davis-Grunsky contract with the State of California. These facilities, except for the county boat ramp and marina, will be operated by the Plumas and Tahoe National Forests.

The dam is the fourth tallest in the United States. It is a thin concrete arch with a crest elevation of 1,965 feet, and stands 635 feet above the streambed.



Taken over Highway 88 looking south, this photograph shows Kirkwood Meadows at the left, with Thimble Peak at the head of the valley beyond.

KIRKWOOD MEADOWS SKI DEVELOPMENT ON SCHEDULE

If all goes according to present plans, phase one of the development of the Kirkwood Meadows Ski Area will be completed in time, and this new area in the Eldorado National Forest will be open to the public for the 1972-73 season.

Located midway between Silver Lake and Caples Lake on California State Highway 88, the ski area will be about a 2½-hour drive from Stockton.

The preliminary master plan calls for six chair lifts, an aerial tramway, a 600-person condominium complex, an 18-hole golf course, a club house, swimming pool, tennis courts, riding stables, and a 120-lot residential area.

Three parking lots will hold 2,800 vehicles. Coffee houses will be constructed at the tops of two chair lifts, while a restaurant will be at the terminus of the aerial tramway. The major base facilities will be on private land in the meadows area.

In planning and designing the development, special attention is being given to water pollution, prevention, and to the protection of scenic values as well as native vegetation and animal life. The developer estimates the ultimate investment will exceed \$41 million.

Kirkwood Meadows bowl, with its base at an elevation of 7,000 feet, is surrounded on three sides by peaks ranging from 8,780 to 9,740

feet. Stein Thor Jacobson, well-known ski instructor and Olympic racer, has been quoted as saying that the area has some of the finest beginner, intermediate, and advanced slopes he has seen.

Kirkwood Meadows was homesteaded in 1860 by Zachary Kirkwood for use as pasture and range for his herds. In 1863, he erected a bar and inn. The building was constructed at the junction of Alpine, Amador, and El Dorado Counties. In the 1920's, it is said, the Kirkwoods drew lines on the floor designating the counties, and gleefully violated prohibition laws by wheeling a caster-mounted bar from county to county as alternate sheriffs appeared.



Forest Service "Snow Rangers" help ensure public safety at ski areas. Weather forecasting equipment—similar to this in the Inyo National Forest—aids the ranger in avalanche control.

TRAIL PEAK WINTER SPORTS SITE AWARDED

A combination term and terminable permit has been issued to the Sierra Inyo Recreation Company of Anaheim, California, to develop the Trail Peak Winter Sports Site in the Inyo National Forest. Trail Peak is located west of Lone Pine, California, in the eastern High Sierra some 230 miles north of Los Angeles.

Initial plans call for three chairlifts, a lodge for overnight accommodations, eating facilities, ski rental and repair shops.

The company now will submit to the Forest Service the final site and construction plans for the initial stage of the development. Plans call for the facilities to open to the public in the fall of 1971.

Most of the skiers are expected to come from the Los Angeles—San Diego area. Access to the area is by a paved Inyo County road from Lone Pine on Highway 395.

The Sierra Inyo Recreation Company was selected from four other proponents who replied to a Forest Service prospectus issued in May 1968.



Before treatment, running water carved deep trenches in the ski bowl.

ERODED SKI HILL TREATED SUCCESSFULLY

Thanks to cooperative resource management a severe erosion problem which had been plaguing the Holiday Hill ski area in the Angeles National Forest has been nearly solved by the Forest Service and the permittee.

The problem originated about 30 years ago when the tree cover was removed before the area was developed. Recently erosion became severe because of the steep slope and lack of



A cover of vegetation now protects the bowl.

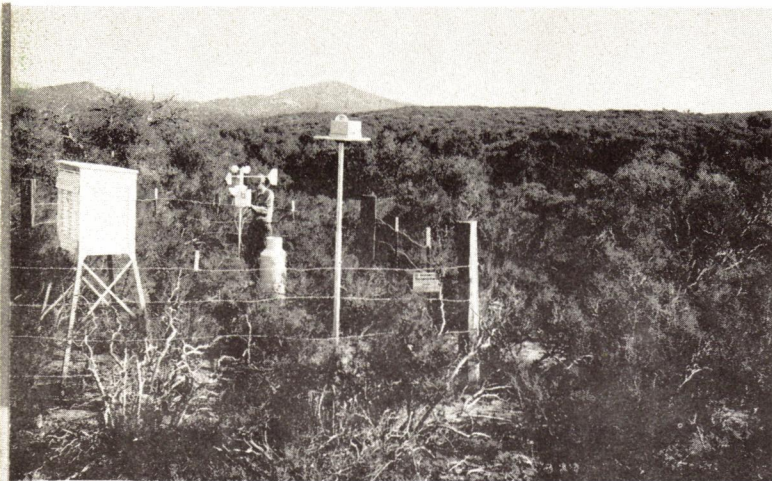
protective vegetation, and the bowl became deeply gullied.

To prevent further damage, a concentrated erosion control program was begun by the permittee with technical assistance by the Forest Service. Initial treatment included smoothing and compacting the excessively eroded slope using a D-8 tractor. Next, contour furrows were constructed, and each furrow was seeded with grasses, fertilized, and then covered and compacted by foot. A sprinkler system, installed up the center of the ski bowl, irri-

gated the area continuously until the grass germinated, and then periodically to maintain soil moisture to 4 inches. Water pressure was controlled to prevent rilling.

The result was an excellent stand of grass that survived the worst rain storms in over 30 years in January and February of 1969, with little or no adverse effect.

To insure future success and complete stabilization, a system of drainage structures will be added to channel excessive runoff, and native shrubs will be introduced.



Weather station in the Morena Watershed, Cleveland National Forest.

HYDROLOGIC STUDY PROGRESSES

Phase I of the Pacific Southwest Hydrologic Survey, essentially completed during the year, had as its objective the evaluation of water yields and the reduction of sediment in waters of the southwestern United States. The Forest Service role was to make this evaluation on National Forest lands tributary to the Pacific Southwest Water Plan Service Area.

Completion of Phase I has led to the implementation of Phase II, which the U. S. Congress has requested in order to obtain detailed information regarding long range water yields and water needs. The objective of this hydrologic survey is to present coordinated, economically sound alternative watershed treatment prescriptions for specific areas identified in the Phase I survey. Five Phase II watersheds have been surveyed—two of them are in the California Region. They are the timbered



Meiss Meadow forms the headwaters of the Upper Truckee River which drains into Lake Tahoe. Here hydrologic information will help maintain a good watershed and avoid water pollution.

Slate-Canyon creeks area of the Plumas and Tahoe National Forests, and the Morena Creek area in chaparral country of the Cleveland National Forest.

The total area involved in all the watersheds is approximately 100,000 acres. All are high value watersheds draining into established reservoirs, and each has a high water yield potential. Each watershed is also used for public recreation. Esthetics, and the need to maintain a high quality environment, will be important considerations in all watershed treatment programs.

HYDROLOGIC EXAMINATION OF TAHOE BASIN

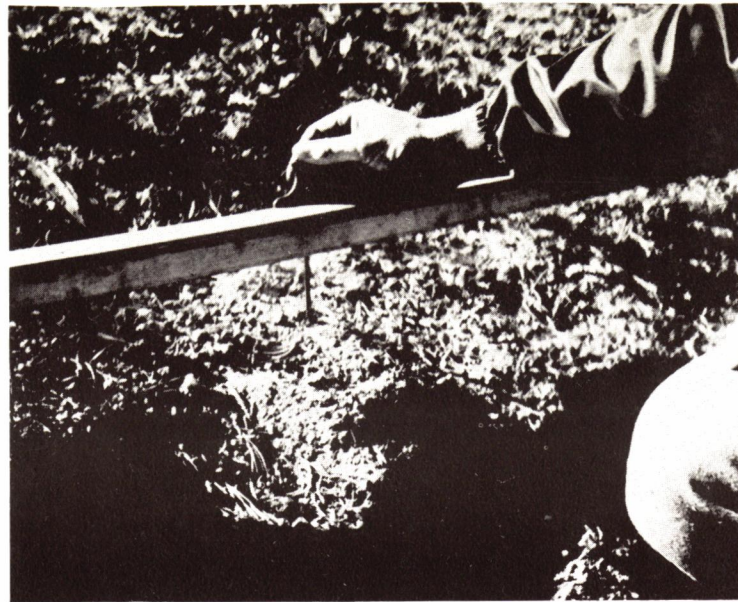
For the past 18 months a Forest Service Hydrologist has conducted water surveys in the Lake Tahoe Basin which will be used as a tool to improve the management and protection of this important area.

The work, performed in the Eldorado National Forest, was undertaken because of the unique features of the Lake Tahoe Basin. Both the quantity and quality of this water are of prime concern.

The surveys involved collecting data on water quality, water quantity, and the degree of erosion. The information gathered is being evaluated, and recommendations will be made concerning land management which will influence all land use activities. Through this type of work, the Forest Service protects the National Forests and increases the benefits derived from them.



A Forest Service soil scientist uses a soil auger to obtain samples for examination.



Measuring erosion is an important part of soil studies.



SOIL REPORT COMPLETED FOR TAHOE BASIN

An important step in the battle against pollution in the Lake Tahoe Basin was taken this year when the Eldorado National Forest and the Soil Conservation Service in Placerville jointly announced the completion of the first soil survey of the Lake Tahoe Basin.

Every tract of ground in the basin, both public and private, was examined for soil type, erodibility, potential for revegetation, and other important characteristics. It is expected that the final maps and report, drawn from this data, will provide the most effective single tool in the fight to control erosion and siltation affecting the waters of Lake Tahoe.

The survey, which was begun in 1967, will yield information for the preparation of a "General Soil Map and Report" to be pre-

sented to the Lake Tahoe Regional Planning Agency in the summer of 1970. The Planning Agency will use the report as a prime source of information in making land management decisions for the basin.

STREAM TEMPERATURES STUDIED

A program of monitoring the water temperatures of eight important tributaries to major rivers was begun this year in the Six Rivers National Forest. Concern for water temperatures of the Klamath, Trinity, and Smith Rivers developed when the Forest Service examined water temperature records kept by the U. S. Geological Survey. They showed late summer temperatures to be nearly lethal for salmon, steelhead, and trout.

The records revealed a marked temperature increase after the winter floods of 1964 and

1965. It is believed that the high waters destroyed streamside shade, and also filled much of the deeper stream beds with rubble.

Because vegetation is still lacking along many miles of streams within the Six Rivers National Forest, the Forest Service has sown alder seeds along three streams this year to speed the return of riparian vegetation. If the results are successful, it will lead to a more intensive program to re-establish the vegetation on other denuded streams next year.

Several questions about this serious water problem remain to be answered: What contributions to the problem are made by the smaller tributaries? Are other activities in the Forest, such as logging, increasing water temperatures? What can be done to improve water qualities for all uses? As soon as the answers to these questions can be firmly established, remedial actions will be taken.



Mount Dana Glacier in the Inyo National Forest was found to extend several feet farther than it did eight years ago.



ANOTHER ICE AGE?

A cooperative program conducted last fall by personnel of the Inyo National Forest, U. S. Geological Survey, and Yosemite National Park revealed that about 12 glaciers south of Tioga Pass are increasing in area. The studies, part of a continuing program to measure and photograph enlargement or reduction of the glaciers, have been carried on for over 80 years.

Last winter's heavy snowfall is the probable cause of the most recent size increase. Whether or not the glaciers will continue to grow this winter depends upon precipitation.

Mount Dana Glacier in the Inyo Forest, one of those found to have "grown" several feet, and the Mount Lyell and Mount Maclure Glaciers in Yosemite National Park were studied for signs of change. The Mount Maclure Glacier is featured in a ten-year research program to determine the importance of water yield from melting glaciers.

Glaciers along the Sierra crest were first studied in 1883 by Israel Russell and Major John Wesley Powell of the U. S. Geological Survey. The records, kept intermittently ever since, permit comparison to be made. California's glaciers are about 5,000 years old, products of the Little Ice Age.

WATER FOR SOUTHERN CALIFORNIA

Cedar Springs Dam, Silverwood Lake, and the San Bernardino Tunnel, portions of the vast State Water Project constructed within the San Bernardino National Forest, are now about 40 percent complete. They will form part of an unprecedented water transportation project extending 444 miles from the upper Feather River to Riverside County to deliver water from the "lush" northern part of the State to arid Southern California. When completed by the California Department of Water Resources in 1972, the project will include 21 dams, 8 power plants, and 21 pumping plants,

all connected by a series of canals, pipes, and tunnels. It is designed to meet the estimated 1990 demands for water throughout much of Southern California at a final cost of some \$2 billion.

The 213-foot-high earthfill Cedar Springs Dam will create the new 78,000-acre-foot Silverwood Lake. In addition to serving as a reservoir for domestic water, the lake will receive heavy recreational use from Southern Californians.

Recreation plans call for nature trails, visitor facilities, concessions, camping, picnicking, boat launching and beach areas. Studies indicate that two million visitors a year, with 10,000 on peak days, can be expected to visit this site.

Fire Protection



A B-17 "air tanker" completes a drop of fire-retarding chemicals along the edge of the Manzanita Fire, Shasta-Trinity National Forests.



The "GO Fire" started in logging debris and burned through 269 acres of valuable timber in the Klamath and Six Rivers National Forests before it was controlled.



Damage in the hundreds of thousands of dollars is done to National Forest resources annually by fire.

FIRE "STARTS" UP; ACREAGE BURNED LOWEST IN YEARS

The 1969 fire season started slowly with the number of fire "starts" well below average during May and June. However, during August a total of 306 man-caused fires were started, the highest for any month in the last 10 years.

The number of fires in the Region totaled 2,249. This was 248 more than average for the preceding five-year period, with man-caused fires still a major problem.

The total area burned was only 19,554 acres—well below the five-year average of 77,166.

Fire season ended in mid-October for all of the Northern Zone Forests, but extended into December for Southern California because of continued dry weather. No serious fires, however, occurred during the period of Santa Ana winds.



This fuelbreak was designed to present a pleasing appearance, as well as to be an effective conflagration barrier.

FUEL MODIFICATION POSSIBLE KEY IN REDUCING WILD LAND FIRE LOSSES

Each year, hundreds of thousands of acres of National Forest land in California need special treatment to reduce the fire hazards caused by land management activities. Over 325,000 acres received this additional protection during 1969.

During the year, 124 miles of fuelbreaks were constructed in 51 areas. These strips, where fuel volumes are modified, are built in strategic locations where fires must be stopped in order to prevent both the loss of important re-

sources and high fire suppression costs. The total of 1,431 miles of existing fuelbreaks represents but a small portion of the ultimate fuelbreak system.

The use of "prescribed fire" is now being extended to the late summer or early fall months in order to meet the goal of disposing of all hazardous fuels. Previously, most burning had been restricted to the period following fall rains. But this left only a few days in which to fire a large number of slash areas. Now, carefully prepared burning plans have made early burning feasible. They involve the use of water sprinkler systems, special firing patterns and



Cattle graze along the edge of a fuelbreak in the Stanislaus National Forest. Perennial grass sown here prevents erosion, and increases benefits for cattle and wildlife.

fire retardant chemicals.

Burning during this period also tends to reduce the effects of smoke on atmospheric quality since less smoke is produced by the dryer fuels, and the smoke columns are better dispersed by favorable atmospheric conditions.

Air quality control guidelines for prescribed burning projects are now being prepared. U. S. Weather Bureau weather forecasters and fire specialists will analyze the effect of fuel quantity, wind strength and direction, and atmospheric stability upon the quantity of contaminants and their dispersal patterns.

Engineering



The Gold Lake Highway was designed to blend with the landscape.



ENVIRONMENTAL QUALITY CONSIDERED IN CONSTRUCTION

Quality of environment is an increasingly important consideration when planning construction projects in the National Forests. One example is shown in before and after photos of the Gold Lake Highway constructed in the Plumas National Forest. The highway has been planned to fit naturally and to blend into the topography which it crosses. The result is a road which gives pleasure to the forest user.

FOREST SERVICE PIONEERS ADVANCED TRANSPORTATION SYSTEM PLANNING

The Forest Service is pioneering a new approach in planning transportation facilities to serve the development of non-urban areas. It includes both study and training programs.

Transportation planning involves gathering and analyzing pertinent information for estimating the current and future transportation needs of a given area. Alternative systems are then conceived and evaluated, and the best one is selected.

The aim of the study program is to create a transportation planning process "custom-tailored" for the development and use of natural resources. The training effort will increase the level of expertise in transportation planning within the Forest Service. A broad spectrum of educational and training programs are being developed at all levels so that the new planning process can be employed effectively throughout the agency.

The Forest Service has secured the aid of individuals and academic institutions having in-

ternational stature in transportation engineering to help accomplish the study and training goals. The participating schools, University of California, Stanford University, and California State at San Jose, have entered into cooperative agreements with the Forest Service to undertake important segments of the programs. Each participant is represented on a coordinating committee that provides technical guidance.

Responsibility for the management of the program rests with the Division of Engineering of the Forest Service. A project team provides day-by-day administration and coordination of program activities. This group, called the Transportation System Planning Project (TSPP), is headquartered in the Bay Area to be close to most participants, and to provide effective coordination.

During the coming year, most activity will be concentrated in developing the new planning process. In the following year, while continuing work on process development, the major emphasis will be turned toward developing the necessary educational programs for the implementation of the planning process.



PLANS COMPLETED FOR LAKE TAHOE VISITOR CENTER

Preliminary plans have been approved for the design of the major building of the Lake Tahoe Visitor Center which will serve as the primary structure of the Visitor Center complex.

The building will have two levels totaling 10,500 square feet. One will consist of a reception-exhibit area with a landscaped plaza and an indoor amphitheater eventually accommodating 330 persons. The second level will

provide facilities for conferences, training, and conservation education. The roof of the building will be accessible to the public and will serve as an orientation and observation deck. It will offer outstanding views of Lake Tahoe, Mt. Tallac, and portions of the basin.

WASTE DISPOSAL PROJECT FOR LAKE TAHOE BASIN

A unique sewer project in the Pope-Baldwin area of the Eldorado National Forest near Lake Tahoe is the result of Forest Service concern for the environment of the Lake

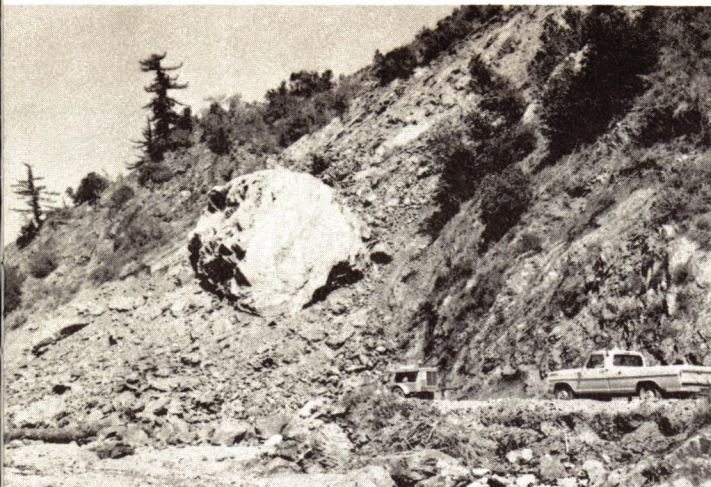
Tahoe Basin, including the clarity and purity of the lake itself.

Included in the Forest Service system are four large pumping stations. They will deliver the wastes into the main system of the South Tahoe Public Utility District for processing at one of the most advanced tertiary sewage treatment plants in the world. The collection and pumping systems are designed for a peak capacity of 5¾ million gallons per day.

The project will involve an expenditure of \$2 million, and upon completion will ensure that no treated or untreated sewage wastes will find their way into Lake Tahoe from National Forest lands.

The greatest challenge has been to devise methods which allow the construction of a sewer line over rugged terrain without creating an intolerable scar on the landscape. One of the techniques used was restricting construction to a strip 25 feet wide to accommodate the sewer trench which has, at times, gone as deep as 24 feet. Other examples include the placing of grass sod through the Camp Richardson Resort area to erase all signs of the trench, and seeding all disturbed areas along the sewer line.

When the major portion of the Forest Service system is completed in the fall of 1970, more than 20 miles of sewer trunk line will collect wastes from a large recreation area including Camp Richardson Resort, Fallen Leaf Campground, several organization campgrounds, Lake Tahoe Visitor Center, and some 180 summer homes. The organization campgrounds and summer homes served are participating in paying for the system through increased fee schedules.



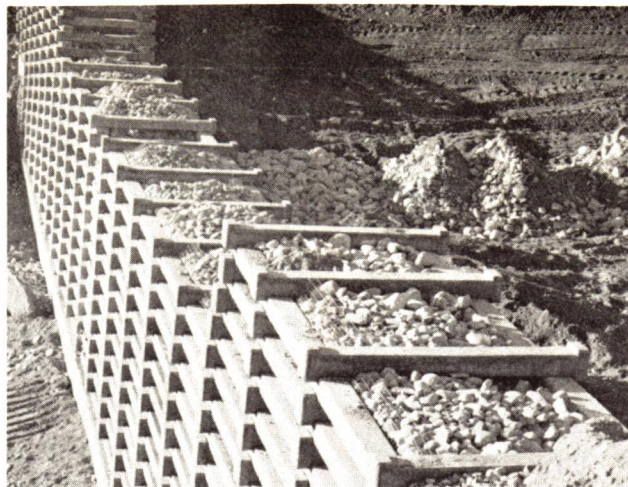
This landslide blocked the Lytle Creek Road in the San Bernardino National Forest.

REGION HARD HIT BY '69 STORMS

Three major storms early in 1969 wreaked havoc with Forest Service installations throughout California. Total damage to Forest Service property was estimated at over \$34 million.

The first storm lasted three days in mid-January, and was centered in the basins of the Sacramento, Russian, and Eel Rivers. Rainfall varied from 7 to 14 inches, and caused moderate flooding and damage along the Russian and Sacramento Rivers.

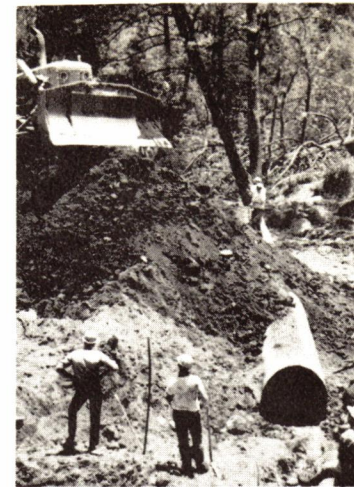
Two other major storms occurred later in January and in the latter part of February. They caused widespread destruction and loss of life in the southern half of the State. Precipitation exceeded 90-year records in some areas, including 83 inches reported at the Lake Arrowhead Ranger Station. The intensity of the precipitation, in some places reaching 10 to 12 inches within 24 hours, also set new highs. At elevations of 7,000 feet and above,



Crib Dam No. 1 in Glencoe Canyon will provide added protection against future floods by stabilizing river bed. Dam is complete except for a gunite cap.

the snowpack reached depths seldom seen, and because of a moisture content which measured as much as 250 percent of normal, caused runoff problems lasting into late spring. The quantity and intensity of precipitation, and the almost continuous nature of the storms, saturated the watersheds and resulted in major erosion and debris problems.

Slides, foundation slips, washouts, and in some cases total obliteration of the forest road system resulted in damages amounting to a total of over \$23 million in the southern portion of the State. Foot and pack trails were damaged to the extent of \$3.25 million. Flood prevention and control structures (including adding new debris and check dams and repairing those damaged by floods on watersheds in the San Bernardino, Angeles, and Los Padres Forests) required expenditures of almost \$6 million. Campgrounds, administrative buildings, range and wildlife facilities, soils and watersheds, and recreational developments sustained damage of over \$2 million.



Drainage structures had to be replaced along many miles of Southern California's mountain roads.



Because access was denied to critical areas and repairs take time, it was necessary to provide temporary emergency access by detours, by opening roads for restricted traffic, and by use of helicopter and fixed wing aircraft for fire protection of inaccessible areas.

Beyond the financial loss, this disaster was an incalculable setback to the Region's resources management programs. Recreational areas, trails, and some roads were unavailable to the public or for logging access during much of the summer. The loss of protective vegetative cover and silt-holding structures exposed watersheds to further damage.

Forest Service personnel worked long hours during and immediately after the storms to protect life and Government property. Teamwork enabled the reconstruction and rehabilitation of the damaged facilities on a programmed basis of priority, but it will be late 1970 before the restoration is completed.

Information and Education



The new Mammoth Visitor Center.



Visitors leaving the Rainbow Pool stream viewing chamber.

VISITOR CENTERS DEDICATED

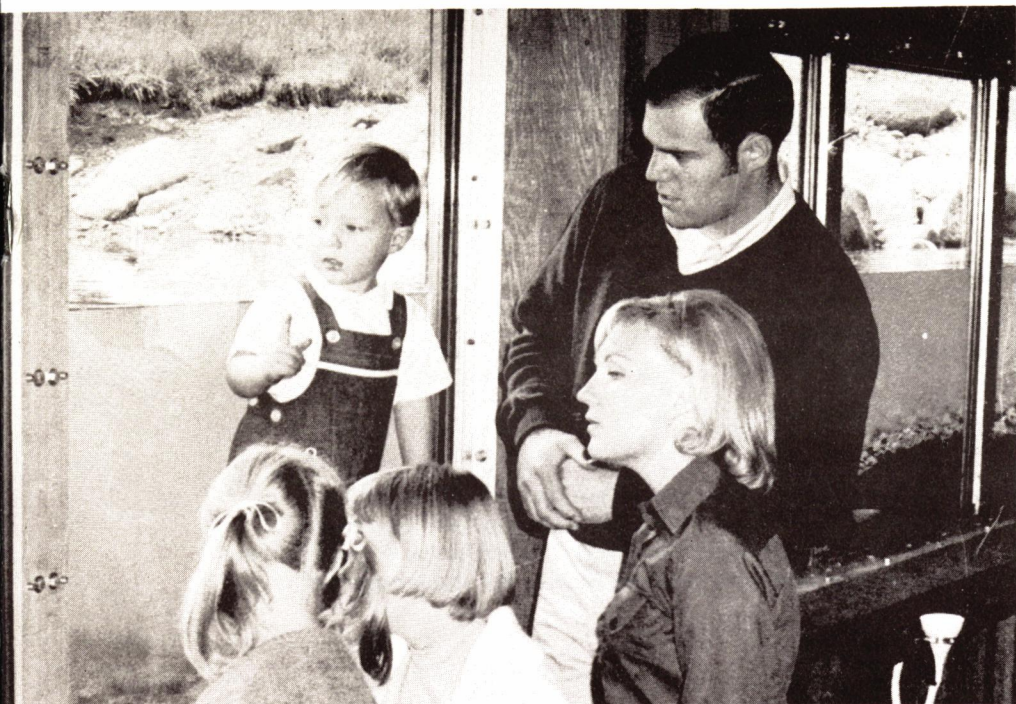
The last weekend in July marked the dedication of both the Mammoth Visitor Center-Ranger Office complex, and the Rainbow Pool Stream Profile Chamber at the Lake Tahoe Visitor Center. Participating in both ceremonies were E. F. Behrens, Executive Assistant to the Secretary of Agriculture, Forest Service Chief Edward P. Cliff, Congressman Harold T. "Bizz" Johnson, and California Resources Secretary N. B. Livermore, Jr. Discussions of Forest Service objectives highlighted the dedications and were well received by large crowds.

Even before completion, the unique Rainbow Pool stream viewing chamber at the Lake Tahoe Visitor Center was a big hit with visitors to the Eldorado National Forest. The chamber itself is entered by way of a descending ramp. The interior is softly illuminated by light filtering through a 33-foot window stretching the length of one wall.

Beyond the 3-inch glass of this window is the sight that has caused all the excitement. A rushing mountain stream is revealed in "profile," and visitors look directly into a water-world, seeing it exactly as the fish do, beneath the surface.

The stream bed is displayed in three parts. At the upper end, where water enters from nearby Taylor Creek, there are riffles and rapids. Insects, a source of food for the fish, breed here, and rainbow trout small fry can be seen darting among the rocks looking for food.

Farther downstream is a spawning area in which the fish lay their eggs, and beyond that is the deeper and wider Rainbow Pool itself where fish of many sizes and species common to Tahoe waters carry out the rituals of day-to-day stream life.



Inside the stream viewing chamber.

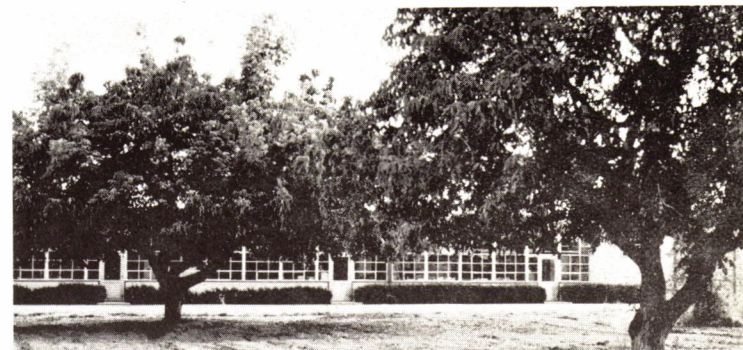
The Mammoth Visitor Center in the Inyo National Forest will have a basic role in better informing visitors of the complex relationships between natural resources, scenic beauty, environmental quality, and standard of living. The main exhibit hall is an area of free-standing contemporary graphic displays illustrating things to do and see in the Inyo Forest. Information is given on the Ancient Bristlecone Pine Forest, Earthquake Fault, wilderness, and other Forest attractions. To stir the imagination of the visitor there are graphic exhibit panels showing scenic vistas together with several "management" messages relating natural resources to our standard of living.

OUTDOOR CLASSROOM FOR CLOVIS SCHOOLS

Through the cooperation of the Sierra National Forest, a groundbreaking ceremony in June marked the establishment of a site for an Outdoor Education Center for the Clovis Unified School District. It was termed an important step in furthering conservation education in this area.

Named the Glenn D. Reavis Center, in honor

The site of the
outdoor classroom.



School officials, Forest Service representative and students attended the groundbreaking ceremony.

of a retired educator active in conservation, the outdoor classroom will provide a place for quiet study as well as for various environmental studies. Here teachers can teach those things better taught "out-of-doors." A pine forest, log area, meadow stream, and pond are features being developed by the students and members of the staff along with interested members of the community.

As an additional result of Forest Service participation, a conservation committee was established by the school district consisting of students, teachers, and the curriculum director.

Personnel Management



The Conservation Education Specialist, attached to the Angeles National Forest, demonstrates how trees are planted for reforesting burned-over land.

CHANGING PROGRAMS AND SKILLS

Responding to changing times, new and different positions were established by the Forest Service Regional Office this year. A new position, Rural Area Development Program Specialist, was created in the Division of State and Private Forestry. This will provide better leadership to field units for many of the social benefit programs in which the Forest Service is becoming involved. Some of the more important programs include Rural Area Develop-

ment, Manpower and Youth Programs, and Technical Action Panels. In addition, coordination will be provided among forest industry, state foresters, researchers, and other state and Federal agencies.

A Conservation Education Specialist was added to the staff of the Angeles National Forest as a result of interest expressed by school systems, organizations, and the general public in conservation education. This new job is designed to provide better service to the public of Southern California, and is the first such

job at any National Forest level in California.

The Forest Service is currently recruiting for an archeologist. What will an archeologist do in the Forest Service? Often archeological sites are located by Forest Service personnel, but specific knowledge about the value and significance of the sites is often lacking. The archeologist will provide expert advice in the broad field of archeology, will locate and verify sites, develop plans to mark, protect, or salvage archeological finds, and provide training to field personnel.

Youths employed during the summer perform many useful duties at supervisors' and rangers' offices.



EQUAL EMPLOYMENT COMMITTEE APPOINTED

To strengthen and ensure a positive, effective Equal Employment Opportunity Program, an advisory committee has been established composed mainly of minority group members. The committee has the responsibility of keeping the Regional Forester informed of the effectiveness of the EEO Program, and will make recommendations when needed to improve it.

The committee forms a direct link with the Regional Forester's office, and will assure that any related problems are brought directly to

his attention before they become critical.

MINOR OFFENDERS WORK IN FOREST

A unique "court crew" program, pioneered by the Angeles National Forest, allows certain misdemeanor offenders the choice of paying a fine, going to jail, or working off their time on weekends improving the resources of the Angeles National Forest. Misdemeanor offenses include littering and vandalism in the National Forest, or violating fish and game, safety, or vehicle code laws.

This program makes it possible for those individuals who are unable to pay fines to remain out of jail, and thus saves taxpayers the cost of their upkeep. Young offenders are able to serve their sentence while learning personal responsibility, and contributing their time to constructive work projects.

The Forest Service also benefits from the program. Numerous nontechnical jobs have been accomplished by court crew labor, and it frees Forest Service personnel for more important tasks. Work accomplished by court crews includes flood damage repair, hazard reduction, campground maintenance and cleanup, and fuelbreak construction.

State and Private Forestry



This gabion dam built by the Sierra Youth Conservation Corps now helps control erosion at Long Meadow.

COOPERATIVE PROGRAMS AID YOUTH, A VITAL RESOURCE

The Sierra National Forest participated this past summer in two unique youth programs. Both the Sierra Youth Conservation Corps and Youth in Conservation Education, Incorporated successfully linked the development of natural forest resources with the development and education of youth.

The Sierra Youth Conservation Corps was developed by the Fresno County Economic Opportunities Commission and the Sierra National Forest. Its objective was to assist and stimulate capable, underprivileged youth to continue their education beyond high school. In this program, 46 youths, aged 16 to 19, spent

10 weeks living, learning, and working in the forest. The Federal Government provided financing, the American Forest Products Corporation donated the use of their logging camp, and Reedley Junior College incorporated a four-unit course in conservation. The Fresno County Economic Opportunities Commission and the Forest Service administered the program jointly.

"Youth in Conservation Education, Incorporated" was a similar program, but unusual because the local community supported it completely through donations of funds, services, produce, and equipment. The main objective was to educate the enrollees in resource conservation. Fifty young men, aged 16 to 20, spent the month of August in the program.



One of 96 youths who helped develop forest resources, and in turn benefited from his experiences. (Photos: American Forest Products Corporation.)

Here again, Reedley Junior College incorporated their four-unit conservation course. The Sierra National Forest participated by providing conservation projects, technical assistance, and work tools.

The conservation work completed by the 96 youths from both programs represented a value estimated at \$35,000. It included timber stand improvement, mountain meadow rehabilitation, stream improvement, roadside environmental improvement, riding and hiking trail improvement, and campground site improvement. In addition to these direct benefits, 96 young men were helped toward better citizenship and gained knowledge through practical experience.

BETTER WOOD UTILIZATION FOSTERED

Utilization of new techniques developed by the timber industry and the Forest Service were encouraged and demonstrated this year, and thanks to technical assistance from the Forest Service, operators of many wood processing plants now obtain a higher percentage of wood from their logs, and market—rather than burn—their wood residues.

This includes the use of thin saws, which not only reduce the material that would have been burned, but also helps stretch the available supply of wood through reducing the width of “kerf,” or opening cut by the saw. Help was given also in applying new types of mechanical log debarkers and log handling equipment.

Forest Service studies of the pulping qualities of California species, and surveys of wood residues of primary manufacturers, have strongly influenced increased use of solid wood residue. Slabs, edging, and trim now can be converted economically into pulp chips, and a low pulp chip market of only 2 or 3 years ago has changed as competition increased for the available chips from mill residue. At present, prices for this material in California approach prices for similar chips in Oregon and Washington. Part of the competition for chips is from markets the Forest Service helped develop.

As an added incentive, smog-control legislation has forced the closing of many “teepee” burners that have belched smoke and ashes into the atmosphere while burning large quantities of potentially usable wood fiber.

This better utilization of the trees harvested

from timberlands has resulted in more jobs, additional profits, and valuable products such as paper, hardboards, and particle boards.

SERVICE FORESTERS AID RURAL LANDOWNERS

Service Foresters working under an agreement between the Forest Service and the California Division of Forestry answered more than 2,500 requests for assistance by small forest landowners this year.

In one case, assistance in noise abatement was given a large corporation in the San Fernando Valley. Subdivisions were creeping closer to an area where noisy tests of heavy rocket engines were conducted. With the help of the Service Forester, forest trees were planted to form a noise screen in a buffer strip a half-mile wide.

Polluted air in the central valley and heavily populated lowland areas has recently created an increasing demand for residential areas and small tree farms in the Sierra Nevadas and coastal mountains of California. As a result, hundreds of individuals sought advice on planting trees or otherwise improving their newly acquired tree farms.

Timber shortages last spring caused mill owners and timberland owners to turn to Service Foresters. For example, a rancher in Mendocino County believed that a portion of his 10,000 acres had some timber growing potential. Although his experience was all with livestock, he did not want to convert any timberland to grazing land if it had higher potential for growing forest trees. The Service Forester's analysis showed about 3,000 acres to be commercially operable timberland. Both

improvement plans and cutting plans were developed, and the rancher was referred to a consulting forester who is now handling his timber sales and other management plans.

In Hawaii, the Service Forester provides similar services. Using some native vocabulary, he included in his report: “I took a mill man and a landowner on a timber reconnaissance trip via the Humuula-Keanakola road along the mauka section of the koa belt. They were interested in inspecting various logging opportunities and the volume of koa within the various holdings—the top section of Maula-nui, Piha, Laupahoehoe, Waipunalei, and Humula.

“I assisted the logging superintendent lay out an estimated three and one-half miles of haul road on the Kikaiau Ranch via the land of Kaala. The road will be constructed primarily for bluegum and koa sawtimber located on the eastern section of the ranch.”

In California and Hawaii, Service Foresters last year advised small landowners on marking timber on 16,415 acres, with a harvest of 28.5 million board feet. Another 260 owners were referred to forest consultants. Assistance also was given forest landowners in 833 separate cases involving activities such as recreation, grazing, Christmas tree growing, water production, and wildlife management. Assistance was given for 3,520 acres of timber stand improvement, 5,440 acres of planting and seeding, and 7,010 acres devoted to commercial recreation. Altogether, the gross returns to forest owners harvesting under improved management last year is estimated at \$3,344,212.



Angeles Forest Supervisor William T. Dresser (left) is shown giving the Fenner Canyon "key" to County Supervisor Warren Dorn, Sybil Brand, Chairman, Los Angeles City Vocational Training Committee, Ernest E. Debs, County Supervisor, and George Froomer, Vocational Training Committee member.

NEW USES FOR JOB CORPS CENTERS

Even though all five of the Federal Conservation Job Corps Centers in California were closed this year, four of them will continue to be used for similar programs under the sponsorship of local public agencies.

The Fenner Canyon Conservation Center in the Angeles National Forest will be operated by Los Angeles County as a rehabilitation center for wards of the court. The Los Pinos Center in the Cleveland National Forest will have a similar program operated by Orange County. The Eldorado National Forest is con-

sidering proposals for using the Sly Park Center for Conservation Education programs.

The Five Mile Center on the Stanislaus National Forest has received two proposals for Conservation Education programs from County Boards of Education.

RURAL COMMUNITIES AIDED

Technical Action Panels (recently reorganized and renamed Rural Development Committees) expanded their role beyond the technical assistance or advisory capacity during the year

to become the catalyst for many community projects.

One of the jobs undertaken by these county-wide organizations was alleviating water pollution in many rural areas by improving water and sewage systems. Foresters serving on the committees helped conduct a recent Statewide survey to identify water and sewage needs in 1,913 rural communities.

The committees have also assisted several communities in obtaining Federal loans or grants for new systems. A typical example is the assistance given by the Lake County Committee in obtaining the installation of a water system at Sulphur Bank Rancheria.

Timber Management



Skyline logging is practical in some areas of rugged topography where soil disturbance must be held to a minimum.

LOGGING IMPROVES NATURAL BEAUTY

The Stanislaus National Forest is nearing completion of a timber sale designed primarily to protect and enhance a high-quality recreational environment. It is taking place in the Clarks Fork and Brightman area in the upper reaches of the Stanislaus River above Pinecrest. This favorite recreational retreat received approximately 300,000 days of recreation use during 1969—an annual increase of about eight percent.

Though an area of exceptional beauty, many trees die each year from insects, dwarfmistletoe, and various diseases. Because of increasing public demand for more camping facilities, overshadowed by a deteriorating forest condi-

tion, specialists prepared a plan to improve the area, and make it safe for users.

Landscape architects, forest pathologists, recreation specialists, and silviculturists defined specific problems and objectives. They identified areas for future recreational development, and selected hazardous trees for removal. Trees apt to die soon, or infect younger trees were also chosen for cutting. Additional trees were designated for removal to improve growing conditions for younger trees, to open up view areas, and to prepare areas for future development. Other trees that would be cut in an average timber harvesting operation were carefully retained to maintain stands of majestic, large trees. Routes for new roads were laid out to minimize soil disturbance while providing maximum public access.

Special logging plans were developed to protect streambanks and minimize soil disturbance throughout the area, and harvesting was timed to avoid conflicts with public use. Special cleanup to remove unsightly accumulations of logging slash and debris, and also for fire hazard reduction, gave the final touch to an attractive natural environment.

Where operations have been completed, it is difficult to realize that logging has taken place. Stately stands of large healthy pine and fir still remain in all their grandeur. Young trees, once overcrowded, now have room to develop, and small openings provide space for campers to enjoy the sun. Moreover campers and hikers can enjoy their visits with greatly reduced threat of injury from falling trees.

TIMBER INSECTS AND DISEASES

An administrative study testing the use of dry, powdered borax to prevent root rot (*Fomes annosus*) indicates that this chemical can be used successfully on fresh-cut stumps in pine areas. This data along with results from similar studies will be used to obtain Department of Agriculture registration of borax for this purpose. However, the total impact of this disease—both present and future—must be more accurately determined prior to attempting control. Survey methods and techniques are now in the process of being developed.

Examinations for white pine blister rust were completed in a large number of critical areas in the Region. This disease has intensified locally in a number of northern Sierra locations, both in upland areas as well as in stream-side zones. A few new disease centers were discovered, but no further southward spread was noticed.

Direct control, by cutting infected trees or pruning, was completed in all known infection centers in the southern Sierra and in Lassen National Park. This work, along with detection surveys, will be continued in southern sugar pine areas. Eradication of gooseberry and currant bushes (alternate hosts for this rust pathogen) was done only in selected areas including plantations in the central and northern portions of the State.

The most promising solution to this problem is through plant breeding and the development of rust resistant trees. A program to develop rust resistant sugar pines has been under way in California for many years, and

recent results are most encouraging. Resistant seedlings now are being field tested in the Klamath Forest.

The salvage of over 7,200 trees infested with western pine beetles greatly reduced the bark beetle epidemic at McCloud Flats in Siskiyou County. Entomologists and foresters found aerial color photos excellent for evaluating the outbreak and planning control. Also, bark samples, examined by X-ray, showed that most of the beetles resided in larger trees. This allowed concentrating on larger trees and saved the expense of spraying smaller ones.

As predicted, it appears that infestation was reduced approximately 80 percent by the salvage logging. But final evaluation will not be completed until the spring of 1970.

To prevent future beetle outbreaks in the young stands at McCloud Flats, extensive thinning sales will begin in 1970. This will provide adequate growing space for the best trees in the stands, and should increase tree resistance to bark beetle attack. The control, and the planned prevention, are made possible with the support of the California Forest Pest Control Action Council and through the cooperation of the timber industry. The capacity of industry to use small timber will be a key in improved forest management in McCloud Flats and similar young forests in California.

An important advance in the detection and suppression of bark beetles may have been achieved by forest entomologists synthesizing bark beetle pheromones. These complex chemicals (produced in nature by beetles) have shown great promise in attracting bark beetle populations. An extensive field trial in which

western pine beetles will be lured into traps with synthetic pheromones, is under consideration by the California Region, the Pacific Southwest Forest and Range Experiment Station, and the University of California.

WRIS-RAM— COMPUTERIZED RESOURCE MANAGEMENT

WRIS-RAM, two new computer-oriented programs of resource inventory and allocation, continue under development. WRIS, the Wildland Resource Information System provides a sophisticated probability sampling method for collecting and displaying in place resource data. This, for example, would include timber size classes, volumes, growth rates, and other information. This data in turn is coded for RAM, which is the Resource Allocation Model linear program. RAM then analyzes the data in line with Forest Service objectives, and provides a scheduled program of management by periodic intervals, usually ten years, and as far into the future as 200 years, to meet these objectives.

WRIS-RAM has been developed cooperatively by the Pacific Southwest Experiment Station and the Regional Office with the assistance of the Eldorado National Forest. The system has been tested on the Cosumnes Working Circle of the Eldorado Forest. It involved stand map preparation and ground inventory. The results of this trial are now being analyzed. Results look promising, and plans are now being made to use the system on a full scale timber management plan inventory of the Stanislaus National Forest.



This is how the brushfields looked before they were cleared.



In 1958, the brush was cleared from this area, and it was ready for planting.

LIVING SUCCESS STORIES— 20 FEET HIGH

The sturdy young pine trees in the Pilot Creek Plantation of the Eldorado National Forest are 115 acres of living proof of a successful land management story which began nearly 14 years ago.

Prior to 1956, only manzanita and other brush grew on this flat, 115-acre ridge top. The result of early day fires, this vegetation choked the land, keeping it less than productive.

But here the earth was fertile, excellent for tree growth. So to return this "idle" land to productivity, site preparation was begun. Bulldozers with "teeth" were used to rip up and windrow the brush, and year-old ponderosa pine seedlings were set into the soil. For the next several years, new areas were treated until a total of 57,000 new trees had been started.

Today, as many of these trees begin their second decade of growth, the results are very encouraging. With a 95 percent survival rate,



The same area in 1969.

one thinning has already been necessary, and it's likely that four more thinnings will be required before the final harvest—some 130 years after planting. In all, a yield of some 12,650,000 board feet of wood is expected; and from land where only brush grew before.

The 115 acres of the Pilot Creek Plantation is not a significant area in itself, but when taken as representative of the 10,000 planted acres in the Eldorado National Forest, and the tens of thousands in the Region, the implications are clear and encouraging for the development of our National Forest timber resource.

During 1969, lumber prices went up rapidly, and then down. The increase was due in part to a high demand for lumber. The decrease was a result of higher interest rates, a resulting scarcity of money available to builders, and resistance to high lumber prices which decreased the number of housing starts.

One result of this rapid fluctuation in prices was an increased concern with short term and long term timber supply. The need for timber will continue high because of our current and future requirements to satisfy a rapidly expanding population.

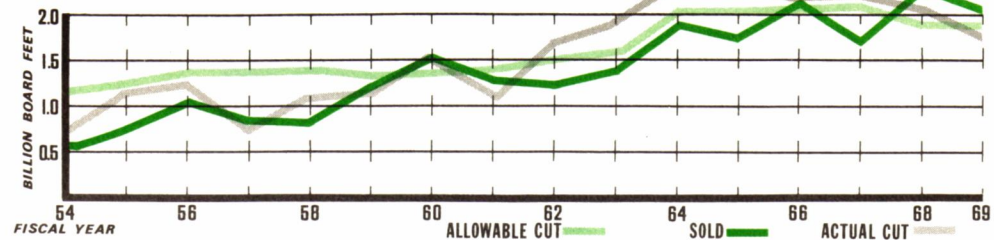
SMOG CONTINUES TO DAMAGE TREES

An aerial survey of the ponderosa-Jeffrey pine forest type in the San Bernardino National Forest of Southern California has raised the estimate of the forest area damaged by smog from 25,000 acres to over 100,000 acres. An additional 61,000 acres of forest outside this forest type also show some damage. Pines were injured to some extent throughout the entire 100,000 acres surveyed. Damage was severe in 29 percent of the area, moderate in over 33 percent, and light in over 38 percent. Some 1.3 million trees show some injury. Of these, 82 percent are moderately damaged, 15 percent severely damaged, and 3 percent are dead. These figures do not include trees that have already been killed and removed from the forest.

The survey, conducted by the Remote Sensing Research Unit of the Pacific Southwest Forest and Range Experiment Station, Berkeley, will be repeated in 1970 in the Angeles National Forest. Future surveys will help determine the rate at which the forest is deteriorating.

Recent investigations show that while ponderosa pines are the most severely affected, ozone injury also occurs in Jeffrey pine, white fir, incense-cedar, Coulter pine, and bigcone Douglas-fir. Jeffrey pine is nearly as sensitive

Relation of timber sold & cut to allowable cut



to damage as ponderosa pine. Sugar pine and giant sequoia appear to be the least susceptible species. For the present, reforestation of severely-affected areas on the San Bernardino National Forest will use these less sensitive species.

Foresters have recognized that some individual ponderosa and Jeffrey pines are more resistant than others of the same species, possibly providing a long-range alternative if smog continues to be a problem in this area.

Other studies carried out by the Forest Service and the University of California in the Arrowhead-Crestline area found that smog-damaged ponderosa pines are especially prone to attack by bark beetles. The more severely affected trees are most often attacked and killed.

Elsewhere in California, plant pathologists from the Pacific Southwest Forest and Range Experiment Station have also found evidence of smog damage to Monterey pine and ponderosa pine stands near Santa Cruz, and in mixed conifer stands in the Sierra Nevada, east of Fresno. These areas will be studied to determine more precisely the levels of injury at which trees can first be detected from the ground and through aerial surveys. It appears that losses will accelerate unless the level of smog is reduced.

CONSOLIDATION OF SEEDLING PRODUCTION

It has been determined that seedlings needed for Regional planting stock can be grown more economically by consolidating production at two nurseries. They are the Humboldt Nursery, Six Rivers National Forest, and the Placerville Nursery, Eldorado National Forest. The two nurseries have the capacity to produce approximately 18 million seedlings a year, the Region's stock needs for the foreseeable future.

The final seedling crop at the Mt. Shasta Nursery in the Shasta-Trinity National Forests will be lifted and shipped in the spring of 1970. This nursery is being converted to orchards for the production of seed from superior ponderosa pines. Root stock for several of the orchards was planted in 1969.

PROGRESS IN SUPERIOR TREE PROGRAM

In the Region's Superior Tree Selection Program, there were 595 new tree selections made, and 2,270 grafts were completed. Superior seed was nursery sown to provide 14,000 sugar pine, 66,000 Knobcone X Knobcone, and 20,000 Jeffrey X Coulter seedlings. Forty-three thousand Jeffrey X Coulter seedlings were shipped during the year.

Range and Wildlife



Before brushland areas are altered, careful consideration is given the pattern which will be created.

BRUSHLANDS DESIGNED FOR UTILITY AND BEAUTY

Brushlands in the National Forests are being altered to benefit the various users, and also with increased attention to natural beauty and overall quality of the environment. In 1969, 11,500 acres of chaparral were altered in one way or another. Before brushland areas are altered, for whatever purpose, the design or pattern that will be created on the landscape is an important consideration. The creation of irregular patterns that result in a natural appearance that is pleasing to view is a part of the chaparral-brushland improvement job.

The word "brushland" conjures up different images to different people. The rancher may

see it as an area where it is difficult to work his livestock and only of limited forage value. The hunter may see it as an area that is difficult to walk through, and where it is nearly impossible to get a decent shot. The wildlife manager may see it as a good or bad habitat depending on the age, composition, and condition of the brush. The firefighter may see the brushland as a potential conflagration area, while the watershed specialist may see it as a water waster, but at the same time a soil-holding cover. All of these individuals have ideas on what can, or should be done to alter the brushland to make it more productive or potentially less damaging to their special interest.

Many other persons view brushlands from



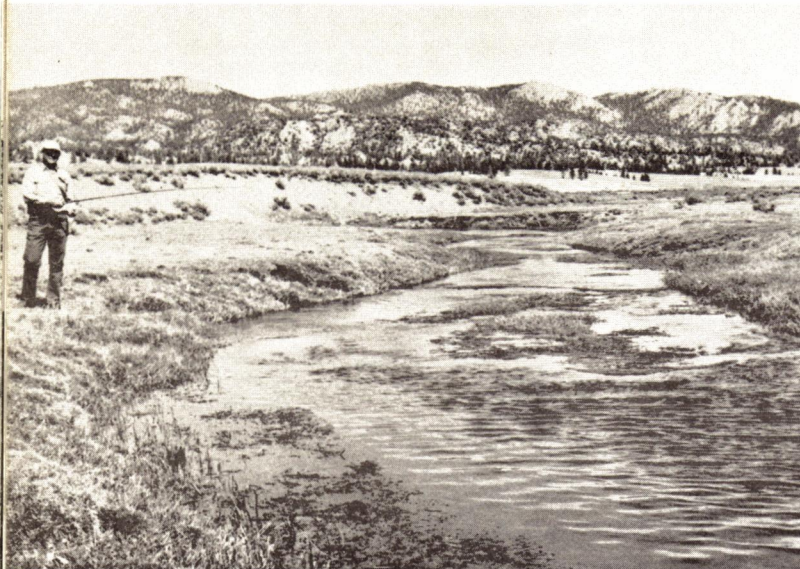
One of some 80,000 calves which grazed National Forest ranges.

cities, roads, aircraft, and any number of vantage points. To these people the greatest benefit from brushland is the pleasure derived from viewing the natural beauty of the land.

It is the job of the Forest Service to treat these brush areas so that they best serve the needs of the majority of users.

NATIONAL FOREST RANGES IMPORTANT FOR LIVESTOCK

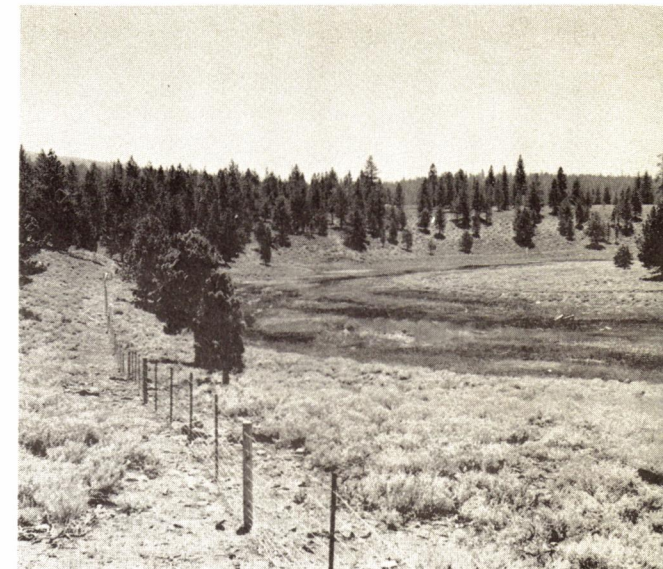
In 1969, approximately 100,000 cows and 80,000 calves spent the summer months in the glades and meadows and type conversion areas of National Forests in California. Almost 75,000 sheep and an equal number of lambs foraged elsewhere in the Forests.



A stream in excellent condition — South Fork Kern River.



Tule elk in the Goodale Range, Inyo National Forest.



To help feed deer replaced by Stampede Reservoir, nearby Hoke Valley was seeded with bitterbrush.

WILDLIFE HABITAT DEVELOPED

A project undertaken on the Tahoe National Forest is aimed at bettering deer habitat to replace that inundated by a new reservoir.

Over 250 feet high, Stampede Dam is some 10 miles northeast of Truckee, California on the Little Truckee River. The reservoir is filling and will eventually cover nearly 4,000 acres of deer range.

In cooperation with the Federal Bureau of Reclamation, Federal Fish and Wildlife Service, and the California Department of Fish and Game, approximately 150 acres in nearby Hoke Valley were seeded with bitterbrush—a choice deer food. Sagebrush was eliminated from much of the area to make way for a better deer habitat. In October and November, the newly seeded acreage was fenced so the small seedlings could attain growth before be-

ing browsed by the deer.

In addition, “check dams” were constructed. The check dams will collect silt, help stop erosion and transform portions of the area into meadows. In the near future, the does and small fawns displaced by Stampede Reservoir can look forward to succulent meadow grass or forbs.

Built by the Bureau of Reclamation, the purpose of Stampede Reservoir is to provide flood protection and water for the cities of Sparks and Reno, Nevada. Campgrounds and boat launching ramps are planned for future construction.

UNUSUAL WILDLIFE PROTECTED

Assuring adequate protection of endangered wildlife species which inhabit the National

Forests is an increasingly important role of the Forest Service.

Two outstanding species which have received national attention are the California condor and the Tule elk. These and other species including the golden trout, the State fish, are receiving special attention and protection.

Close cooperation with the California Department of Fish and Game and coordination with other Forest Service management activities are primary requirements. Detailed inventories and a knowledge of the animal populations and their requirements are necessary, and usually call for annual surveys.

Protecting and developing the habitats on National Forest land is a major Forest Service responsibility. Balancing populations with their habitat, and enlarging the populations are objectives of the cooperating agencies.

Lands and Minerals



Looking into the proposed Emigrant Wilderness from the Sonora Pass Road. Rugged peak at center of photo is Granite Dome which reaches an elevation of 10,306 feet.

NEW WILDERNESS PROPOSED

At a public hearing held in late September, opinion was gathered on a Forest Service proposal to reclassify the Emigrant Basin Primitive Area as the Emigrant Wilderness under terms of the Wilderness Act of 1964. The 97,000-acre primitive area is located in the Stanislaus National Forest some 70 air miles northeast of Modesto at the headwaters of the Tuolumne and Stanislaus Rivers.

The results of the meeting will be announced during 1970.

The proposal called for the addition of over 15,000 acres of unique forest land on the western and northern boundaries that contain numerous natural features.

The proposal also deleted 6,063 acres on the eastern boundary of the primitive area because of many man-made improvements which

do not conform to the wilderness concept. These include a road to an active mineral patent and several cabins, dams, and weirs. Another portion of the proposal deletes 380 acres in the man-made "Relief Reservoir" area in the northwest portion of the area.

Elevations in the proposed wilderness vary from 5,200 feet near Cherry Lake, at the south, to 11,570 feet at Leavitt Peak in the north. The area has about 100 lakes, many of which are bordered by meadows or by pines and junipers, with backgrounds of massive granite outcroppings.

At present there are 17 areas classified as wilderness in the 17 National Forests in California. They cover over 1.6 million acres.

LAND PURCHASED IN BLACK MOUNTAIN SCENIC AREA

The Forest Service recently acquired an ad-

ditional 500 acres within the 7,000-acre Black Mountain Scenic Area of the San Bernardino National Forest. This parcel, purchased with money from the Land and Water Conservation Fund, includes unimproved mountain land adjacent to the San Jacinto Wilderness. Offering spectacular views of the Coachella Valley and San Geronio Mountain from the higher ridges, this acquisition will help consolidate the scenic area, and simplify its management. Had this land not been purchased, it is probable it would have been subdivided and developed within a few years.

A National Forest Scenic Area contains an unusual forest or scenic attraction which requires special care in management to assure that it will remain in an undisturbed condition while, at the same time, still be usable by numerous forest visitors.

PG&E DEEDS LAND TO FOREST SERVICE

The Pacific Gas and Electric Company has granted the Forest Service title to 110 acres of land for the development of a new public recreational area on the shore of Lake Alpine in the Stanislaus National Forest. The company will retain ownership of the lake which, at an elevation of 7,300 feet, has been a popular recreational area for many years.

The Forest Service has developed a long range recreational development plan for the area. The initial project will be the expansion of the campground to about 10 acres—targeted for completion in 1970.

VACATION CABIN EXCHANGE CONSUMMATED

In one of the largest bulk recordings in the history of San Bernardino County, the completion of the Strawberry Flat land exchange case made 200 permittees owners of the land upon which their cabins are built in the San Bernardino National Forest.

The area, which was a camping site some 50 years ago, had become a residential community with all of the problems attendant to the growth of a small town. Permanent solutions to these problems were hampered by the fact the cabin owners' interest in the land was in form of a permit.

The permittees first formed a corporation and obtained title to two isolated parcels of vacant private land which were suitable for National Forest management. These parcels were accepted by the Forest Service in exchange for the National Forest land where the cabins stand.

After completing the legal aspects of the exchange, 233 instruments were recorded on July 1, 1969. They included easement deeds to the State, County, and utility companies and titles to the individual lot owners.

Only those summer home tracts which clearly will not be needed for a higher public use in the foreseeable future can be considered for such exchanges. Many summer home tracts must remain in Federal ownership, both as an

integral part of the recreational "mix," and to assure future availability to the public of certain public lands.

TWO IMPORTANT NATURE CONSERVANCY PURCHASES

The Nature Conservancy, a private nonprofit organization, has taken two options to acquire choice lands in the Lake Tahoe Basin, and will offer them for purchase by the Forest Service.

The Nature Conservancy has the primary objective of acquiring and protecting outstanding natural areas to forestall price escalation or loss to development.

One purchase includes 900 feet of sandy beach at Lake Tahoe near Baldwin Beach. With the ever-expanding pressures of population in the Tahoe Basin, the purchase of this choice property will guarantee additional recreational opportunities for the public.

The second purchase comprises 160 acres near Five Lakes in the proposed Granite Chief Roadless Area. This purchase will further the plan to keep the area undeveloped and available for public enjoyment. The property also lies adjacent to the Squaw Valley State Park and the Bear Creek Recreation Composite. The proposed Pacific Crest Trail will undoubtedly traverse the property.

Money from the Land and Water Conservation Fund will provide the Government an opportunity to purchase these desirable tracts of land.



ADDITIONAL NATIONAL RECREATION AREA PURCHASES

This past year, three purchases totaling 149 acres were made along the scenic 12-mile strip of Interstate Highway 5 which bisects the Shasta Lake Unit of the Whiskeytown-Shasta-Trinity National Recreation Area.

One of the prime purposes for the establishment of the Whiskeytown-Shasta-Trinity National Recreation Area was to conserve the scenic values for public enjoyment. Putting this private land into public ownership assures that the scenic splendor along this corridor will not be destroyed by unsightly commercial developments.

Another important purchase was concluded when 583 acres along Shasta Lake became public. The area, commonly called North Gray Rocks, is visible from the highway and much of the lake. The purchase boundary abuts the Lake Shasta Caverns, a popular privately owned tourist attraction.

SISKIYOU STUDY AREA GENERATES MUCH INTEREST

Future management of the 171,500-acre Siskiyou Study Area in the Klamath and Six Rivers National Forests was the subject of public meetings held at Crescent City and Yreka in February. Based on more than 1,000 letters and statements received, and the recommendations of the Forest Supervisors, the management direction for the Siskiyou Study Area will follow closely that which has applied to the area. It will be managed for the multiple resources of the area rather than being designated as wilderness. Special protection will be given botanical values and the crest zone.

Over 250 people participated at each meeting, and opinions were expressed by representatives of local cities, counties, organizations, the business community, the Sierra Club, and the forest industry. Nearly all the testimony indicated opposition to major changes from current management direction for the area, but helpful testimony included a wide range of alternatives.

As a result of these public expressions, management plans have been modified in several respects.

Particularly interesting was the number of young people who actively participated in the meetings, including student groups from Yreka High School and Humboldt State College. The young people made statements on various management alternatives which reflected insight and concern.

PURCHASES ENHANCE SESPE CONDOR SANCTUARY

The purchase of two tracts of land, one within the Sespe Condor Sanctuary and one adjacent to it, have helped reduce the possibility of the encroachment by "civilization" on this area. The sanctuary, a portion of the Los Padres National Forest, was set aside in 1947 to protect and perpetuate the California condor, a rare and endangered bird species.

The acreage was purchased with money from the Land and Water Conservation Fund which is derived from the sale of the Golden Eagle Passports, motorboat fuel tax, surplus government property, and receipts from outer continental shelf lands.

LANDS OBTAINED THROUGH "RECEIPTS ACTS"

Under terms of the Receipts Acts of 1938 and 1940, three parcels of land totaling 310 acres were purchased within the Angeles and Cleveland National Forests. The parcels contain steep brush-covered slopes which had potential residential value. The purchases will keep homes out of this dry, explosively flammable area, and reduce the chance of fires to protect valuable watersheds which supply population centers of Southern California.

The Receipts Acts authorize the Forest Service to purchase lands that have extreme potential for soil erosion and flood damage in the San Bernardino, Angeles, Cleveland, and Sequoia National Forests. It is important to purchase these highly erodible lands and put them in public ownership so they can be managed along with adjacent Forest Service lands.



The National Champion Sargent cypress is in the newly formed Cuesta Ridge Botanical Area.

NEW BOTANICAL AREA

Rich in scientific and esthetic values, the Cuesta Ridge Botanical Area, consisting of 1,333 acres, was designated by the Regional Forester in May. This small but unique area lies along the crest of the Santa Lucia Mountains within the Los Padres National Forest in San Luis Obispo County.

The Botanical Area contains important plant communities which are significant because of their occurrence, arrangement, ecology, and rarity. It also boasts the largest Sargent cypress (*Cypressus sargentii* Jeps.), declared a National Champion by the American Forestry Association.



Higher peaks of the Santa Lucia Mountains dominate the Ventana Wilderness—nearly 100,000 acres of rugged terrain.



The graceful, spire-like tree tops identify the unusual bristlecone fir of the Ventana Wilderness.

TWO MORE WILDERNESSES ESTABLISHED IN CALIFORNIA

Two more wildernesses were added this year to the ever-expanding National Forest Wilderness System in California.

The 16th was the Ventana Wilderness in the Los Padres National Forest, created on August 18. This was previously the Ventana Primitive Area, and upon establishment was increased from 54,857 acres to 97,970 acres. It is the only National Forest Wilderness to contain the



Lake Aloha is the largest of many lakes in Desolation Wilderness.

California coast redwood and the rare and beautiful Santa Lucia fir, also known as the bristlecone fir. Located in Monterey County, the Wilderness is less than 150 miles by car from San Francisco.

The Desolation Wilderness in the Eldorado National Forest became the 17th wilderness to be established. The area, formerly the Desolation Valley Primitive Area of 41,383 acres, was increased substantially in size when it became a wilderness, and now totals 63,469 acres. It is known for its fishing, hiking, and superb scenery of rugged mountains, glaciated

valleys, lakes, streams, and alpine vegetation, and also because it forms the headwaters of the Rubicon River, South Fork of the American River, and tributaries of the Truckee River.

The California Region's portion of the National Wilderness System now includes 1,606,368 acres. These areas will remain in a wild and natural condition for the enjoyment and recreational benefit of hundreds of thousands of National Forest visitors who "escape" to the world of primitive America.

U.S. Forest Service
Pacific Southwest Library and Information Center
1323 Club Drive
Vallejo, CA 94592-1110

The Forest Service, U. S. Department of Agriculture, is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives—as directed by Congress—to provide increasingly greater service to a growing Nation.

National Forests IN CALIFORNIA

CALIFORNIA REGION HEADQUARTERS

U. S. Forest Service
630 Sansome Street
San Francisco, CA 94111

NATIONAL FOREST HEADQUARTERS

Angeles National Forest
1015 No. Lake Avenue
Pasadena, CA 91104

Cleveland National Forest
3211 5th Avenue
San Diego, CA 92103

Eldorado National Forest
100 Forni Road
Placerville, CA 95667

Inyo National Forest
2957 Birch Street
Bishop, CA 93514

Klamath National Forest
1215 So. Main Street
Yreka, CA 96097

Lassen National Forest
707 Nevada Street
Susanville, CA 96130

Los Padres National Forest
42 Aero Camino
Goleta, CA 93017

Mendocino National Forest
420 E. Laurel Street
Willows, CA 95988

Modoc National Forest
441 No. Main Street
Alturas, CA 96101

Plumas National Forest
159 Lawrence Street
Quincy, CA 95971

San Bernardino
National Forest
175 W. 5th Street
San Bernardino, CA 92401

Sequoia National Forest
900 W. Grand Avenue
Porterville, CA 93257

Shasta-Trinity
National Forests
1615 Continental Street
Redding, CA 96001

Sierra National Forest
1130 "O" Street
Fresno, CA 93721

Six Rivers National Forest
710 "E" Street
Eureka, CA 95501

Stanislaus National Forest
175 So. Fairview Lane
Sonora, CA 95370

Tahoe National Forest
Highway 49 & Coyote St.
Nevada City, CA 95959

INTERMOUNTAIN REGION

Toiyabe National Forest
Main Post Office Building
Reno, Nevada 89504

